

Listing of the Claims

1. (Currently Amended) A method of bonding substrates, comprising:
depositing a layer of bonding substrate material of TEOS oxide onto
5 a bonding surface of a first substrate of glass;
increasing a bonding site density by striking plasma onto the
bonding surface treatment without a wet treatment thereafter ~~of at least one of~~ on
the layer of bonding substrate material on said first substrate and on a bonding
surface of a second substrate that includes TEOS oxide enclosing an optical
10 device; and
fusion bonding at room temperature using compression force the
bonding surface of the first substrate having the layer of bonding substrate
material to the bonding surface of the second substrate.
- 15 2. (Original) A method according to Claim 1, further comprising:
polishing the layer of bonding substrate material and the bonding
surface of the second substrate prior to the step of increasing the bonding site
density.
- 20 3. (Original) A method according to Claim 2, wherein the step of polishing
includes using chemical-mechanical polishing.
4. (Original) The method according to Claim 2, wherein said step of
polishing includes polishing said layer and said second substrate to angstrom-
25 level flatness.
5. (Currently Amended) A method according to Claim 1, wherein the
step of ~~bonding~~ increasing the bonding site density comprises:
~~fusion~~ plasma striking the bonding surfaces of the first substrate and
30 the second substrate ~~at substantially room temperature to form a package with at~~
least one of the group of O₂, N₂, and Ar plasma.

6. (Original) A method according to Claim 5, wherein the step of bonding further comprises:

annealing the package for approximately two hours at approximately 200 °C.

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7. (Currently Amended) The method according to Claim 1, wherein ~~said step of depositing includes depositing tetraethoxysilane, amorphous silicon, silicon nitride or glass frit~~ the refractive index of the layer of bonding substrate material is similar to at least one of the first substrate or the second substrate.

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Claims 8 and 9 (Cancelled).

10. (Currently Amended) A method according to Claim 1, wherein the step of increasing the bonding site density comprises:

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plasma ~~treating~~ striking at least one of the layer of bonding substrate material and the bonding surface of the second substrate with at least one of the group of an ion beam sputtering process, ion implantation, and ion bombardment.

Claims 11 and 12 (Cancelled).

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Claims 13-22 (Cancelled).